



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,852	04/02/2001	Simon Jacobs	500744.03	9969
27076 7590 07/10/2008 DORSEY & WHITNEY LLP INTELLECTUAL PROPERTY DEPARTMENT SUITE 3400 1420 FIFTH AVENUE SEATTLE, WA 98101			EXAMINER ROBERTSON, DAVID	
			ART UNIT 3623	PAPER NUMBER
			NOTIFICATION DATE 07/10/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Office Action Summary

Application No.

09/824,852

Applicant(s)

JACOBS ET AL.

Examiner

Dave Robertson

Art Unit

3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27, 31-36, 38-60 and 62-81 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27, 31-36, 38-60 and 62-81 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-884)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 6/23/2008

DETAILED ACTION

1. This is a Non-final office action in response to Applicant's reply of 4/10/2008. Claims 1-27, 31-36, 38-60 and 62-81 are pending. This action is made non-final to enter new grounds of rejection as to 35 USC § 101.

Response to Amendment

2. Applicant amends claims 1, 11, 21, 34 and 58 to address rejections under 35 U.S.C. 112 by clarifying that "reservations that are aggregated are not limited to those reservations allocated to the same technician." (Remarks page 15) Similar amendment is made in each of the independent claims. Accordingly, the rejection on this point under 112, second paragraph, is hereby withdrawn.
3. Applicant amends claims 1, 11, 21, 34 and 58 to more clearly recite the aggregation indicator as having two settings, one for enabling aggregation of the reservation and one for disabling aggregation. This amendment is addressed in the remarks and updated rejections to follow.

Response to Arguments

4. Applicant's arguments filed 4/10/2008 have been fully considered but they are not persuasive:

Applicant's essential argument is that Lesaint et al. (US 6,578,005) does not teach a two-setting aggregation indicator that can be enabled and disabled to control which tasks are eligible for aggregation, as the amended claims now expressly recite:

an aggregation indicator having a first setting to enable aggregation of the reservation and having a second setting to disable aggregation of the reservation; the operation of the indicator being to allow aggregation of a reservation if the indicator is set to enabled, and not aggregating the reservation if the indicator is set to disabled. Applicant argues that Lesaint's aggregation parameter set as characterized by the Examiner, cannot function as both an aggregation indicator, enabling or disabling aggregation, and as the set of aggregation parameters that when matched (or in proximity to) cause aggregation of a set of reservations to occur. (Remarks page 16).

Applicant's further arguments over Examiner's prior characterization of aggregation parameters as also functioning, broadly interpreted as "enabled aggregation indicators" are moot in view of Applicant's amendment to the claims now distinctly reciting a two-setting aggregation indicator. The claims now recite an aggregation indicator separate from the reservation parameters, where the aggregation indicator acts as a flag (or toggle) to allow or disallow a particular reservation to be aggregated into a set of reservations, and where the reservation parameters are used to determine which reservations may be aggregated by virtue of location, task, skill, or other parameter.

Examiner respectfully disagrees, however, as to Lesaint not teaching a separate aggregation indicator "flag" operable to control whether a particular reservation is aggregated or not by the optimization process. Lesaint expressly teaches a test "to determine if the scheduled task is flagged as of high importance or as difficult to allocate [and] if so, it is allocated to the technician without any further optimisation being

attempted.” (See column 28 from line 20 referring to the flow chart logical test at Item 1303 of Figure 13).

That is, Lesaint teaches a “flag” which indicates whether or not a scheduled task may be further optimized, which in Lesaint includes optimization by the aggregation of tasks. A task that is “flagged” cannot be aggregated; therefore, Lesaint teaches an aggregation indicator flag that must have at least two settings (for use in the logical test of Figure 13 at 1303), one setting which allows aggregation of the task and one that does not.

5. Accordingly, the grounds of rejection over all claims as in the prior office action are maintained and updated in view of Applicant's amendments.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1-10 and 34-36, 38-57 are rejected under 35 U.S.C. 101 based on Supreme Court precedent, and recent Federal Circuit decisions. For a process to be patentable subject matter under § 101 the process must (1) be tied to another statutory class of invention (such as a particular apparatus) or (2) transform subject matter to a different state or thing. See *Diamond v. Diehr*, 450 US 175, 184 (1981); *Parker v. Flook*, 437 US 584, 588 n9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 US 780, 787-88 (1876). If neither of these requirements is met by the claim, the method is not a patent eligible process. To qualify under § 101 as a statutory

process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state.

In the present case, claims 1 and 34 recite: *A computer implemented method for scheduling mobile service representatives...* However, recitation of *computer implemented* in the preamble does not create a sufficient tie of the method (a process claim) to a particular apparatus because none of the steps in the process is recited as being performed by the computer system. Rather, reciting *computer implemented* in the preamble leaves open a broadest reasonable interpretation that all steps could be practiced by hand, by mental steps, or by using the computer in some minimal step in nominal fashion, such as entering or displaying data or using the computer as a simple calculator. None of claims 2-10, 35, 36, or 38-57 depending from the base claims 1 or 34 recites any specific step performed by a particular apparatus and are similarly deficient. Lacking a sufficient tie to another statutory class, claims 1 and 34 and their dependents are nonstatutory subject matter.

Appropriate amendment is required.

8. Claim 21-27, 31-33 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 21 recites: *A computer implemented system...having a scheduling engine comprising...a negotiator...; an assignment filter...; an assigner...; an aggregator...;*

and an optimizer... However, a computer implemented system without structure, where the components of the system are disclosed as encompassing computer software is disembodied software *per se*, and software *per se* is non-statutory. Claims 22-27 and 31-33 depend from claim 21 and are similarly nonstatutory.

Appropriate amendment is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 12-20, 21-27, 31-33, 59, 60, and 62-81 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 12-20 recite: *The method of claim 11, further comprising...* However, Claim 11 recites: *A computer readable medium...to perform a method...* Dependent claims must be of the same statutory class as the parent and include all limitations of the parent claim. As claim 11 is a computer readable medium (a product claim) and includes the medium whereas claims 12-20 comprise the method of claim 11 only (no medium), claims 12-20 are indefinite. Claims 59, 60, and 62-81 are similarly recited in relation to independent claim 58 and are, for the same reason, indefinite. For the purposes of examination, the claims will be taken to recite: *The computer readable medium of claim 11 [58], the method for scheduling...further comprising the step(s) of...*

Art Unit: 3623

Claim 21 recites *A computer implemented system...having a scheduling engine comprising...a negotiator...; an assignment filter...; an assigner...; an aggregator...; and an optimizer...* However, a computer implemented system without structure, where the components of the system are disembodied software is indefinite. Claims 22-27 and 31-33 depend from claim 21 and are similarly deficient.

Appropriate amendment is requested.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-27, 31-36, 38-60, and 62-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over MDSI Mobile Data Solutions (www.mdsi-advantex.com) in view of Sisley et al. (U.S. 5,467,268) and in further view of Lesaint et al. (U.S. 6,578,005).

As per claim 1, MDSI Mobile Data Solutions teaches a computer-implemented method for scheduling an order to a mobile service representative, the method comprising:

negotiating a reservation to perform an order for a customer against a schedule (See page 3, section 1, and page 4, sections 2-3, wherein the reservation is negotiated);

adding a reservation, wherein adding a reservation includes identifying a duration, a priority, a location, an appointment window, a mobile service representative, a bumping indicator (See page 3, page 4, sections 2-3, and page 5, sections 2-3, which disclose these criteria);

analyzing shifts of mobile service representatives to identify shifts that are suitable for reservation (See page 3, page 4, sections 2-3, and page 5, sections 2-3, wherein the availability of a mobile service representative to take a call is determined);

booking the order to one of the shifts of mobile service representatives according to objective criteria (See page 3, sections 1-2, and page 4, wherein the service order is booked to a schedule of a mobile worker, based on at least the criteria of location);

optimizing periodically the shift of the mobile service representative (See page 3, section 1, and page 4, sections 2-3, wherein the shifts are rebalanced periodically).

However, MDSI Mobile Data Solutions does not expressly disclose sorting the identified shifts according to objective criteria or booking a shift starting with the best shift and in descending order to the worst shift. Further, MDSI Mobile Data Solutions does not expressly disclose an aggregation indicator, where aggregating reservations not limited to a particular mobile service representative and having an aggregation indicator in accordance with an aggregation parameter set defining information of reservations to be compared during aggregation, the aggregated reservations having a same value for the information defined by the aggregation parameter set.

Sisley et al. discloses sorting the identified shifts according to objective criteria or booking a shift starting with the best shift and in descending order to the worst shift (See

Art Unit: 3623

column 5, line 50-column 6, line 15, column 7, lines 9-20, column 8, lines 1-15, column 9, lines 20-30, and column 10, lines 15-30, which discusses sorting the shifts based on skills, availability, etc. and then listing them in a "best-first" queue). However, Sisley et al. does not expressly disclose aggregating reservations not limited to a particular mobile service representative and having an aggregation indicator in accordance with an aggregation parameter set defining information of reservations to be compared during aggregation, the aggregated reservations having a same value for the information defined by the aggregation parameter set.

Lesaint et al. teaches aggregation parameters and aggregating reservations not limited to a particular mobile service representative and having an aggregation indicator (see column 28 from line 20 referring to the flow chart logical test at Item 1303 of Figure 13) in accordance with an aggregation parameter set defining information of reservations to be compared during aggregation, the aggregated reservations having a same value for the information defined by the aggregation parameter set (See column 12, lines 30-50, column 14, lines 15-25, wherein the order is made up of multiple aggregated orders that include information about specific ordering or requirements. Specifically, certain tasks are designated for pre-processing, while others are not. Those designated for preprocessing are allowed to be aggregated, and the tasks are matched based on conditions such as tasks that must be allocated to the same technician.

Both Sisley et al. and MDSI Mobile Data Solutions disclose systems that assign mobile field technicians to work calls using automated means. Further, both disclose

assigning the best technicians based on the appointment window, a duration, a priority, a location, and a set of skills of the technician and service call. It would have been obvious to one of ordinary skill in the art at the time of the invention to sort the identified shifts according to objective criteria and book shifts starting with the best shift first according to the objective criteria in order to increase customer satisfaction improving the timeliness and predictability of resource delivery and increase dispatcher productivity through automated assignment and scheduling. See column 3, lines 50-55, of Sisley et al.

Further, all of MDSI Mobile Data Solutions, Sisley et al., and Lesaint et al. disclose systems that optimize the scheduling of tasks to workers in a field technician service industry, taking into account task/order requirements and worker constraints. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include scheduling aggregate orders in order to more efficiently meet the needs of the person placing the order. See column 3, lines 50-65.

As per claim 2, MDSI Mobile Data Solutions teaches configuring a constraint set, wherein the act of configuring allows a user to modify the constraint set so as to control the way in which orders are assigned to a mobile service representative (See page 4, sections 2-3, wherein the system has a set including priority, skills, etc. that is used to assign service orders).

As per claim 3, MDSI Mobile Data Solutions wherein negotiating includes using a window over the schedule, wherein the window defines a set of shifts in the schedule

that can be booked by the act of booking (See page 4, sections 2-3, and page 5, sections 2-3, wherein a window is used to view the availability of the mobile workers).

As per claim 4, MDSI Mobile Data Solutions discloses wherein negotiating includes negotiating an appointment window for the order so as to allow the mobile service representative to begin the performance of the order within the time frame of the appointment window (See page 4, sections 2-3, and page 5, sections 2-5, which discusses performance of the service order).

As per claim 5, MDSI Mobile Data Solutions discloses bumping an order, which has a lower priority, for another order, which has a higher priority (See page 3, section 2, page 4, sections 1-3, wherein the service orders are rebalanced based on priority and emergencies).

As per claim 6, MDSI Mobile Data Solutions discloses a priority of an order (See page 3, section 2, and page 4, which discuss priorities of tasks). However, MDSI Mobile Data Solutions does not expressly disclose and Lesaint et al. discloses escalating the priority of an order over time when the order has not been performed by the mobile service representative (See column 6, lines 6-17, column 21, lines 5-30, wherein queue time is considered, where a call has a priority as well as a queue time beyond which the call is considered tardy).

Both Sisley et al. and MDSI Mobile Data Solutions disclose systems that assign mobile field technicians to work calls using automated means. Sisley et al. specifically discloses the amount of time allowed between the receipt of a service call and the assignment of the call to a technician. It would have been obvious to one of ordinary

skill in the art at the time of the invention to escalate the priority of an order when it has not been performed in order to increase customer satisfaction improving the timeliness and predictability of resource delivery and increase dispatcher productivity through automated assignment and scheduling. See column 3, lines 50-55.

As per claim 7, MDSI Mobile Data Solutions teaches scheduling an order with a mobile service representative (See page 3, sections 1-2, page 4, wherein the service order is booked to a schedule). However, MDSI Mobile Data Solutions does not expressly disclose splitting an order to a set of orders when the performance of the order requires a number of days to perform the order.

Sisley et al. discloses an order having an estimated call duration (See column 6, lines 15-30).

Both Sisley et al. and MDSI Mobile Data Solutions disclose systems that assign mobile field technicians to work calls using automated means. It is old and well known in the service industry that not all service requests are completable in a single day and require multiple days of work. Therefore, since MDSI Mobile Data Solutions and Sisley et al. disclose assigning field service workers to requests of a customer based on the requirements of the customer and an estimated call duration, it would have been obvious to one of ordinary skill in the art at the time of the invention to allow for the assignment of an order over multiple days in order to more efficiently meet the needs of the person placing the order. See column 3, lines 50-55 of Sisley et al.

As per claim 8, MDSI Mobile Data Solutions teaches wherein optimizing includes optimizing a single shift of a mobile service representative so as to shorten travel time

between orders booked in the single shift (See page 4, section 3, and page 5, sections 2-3, wherein mobile workers are assigned as close to their location as possible).

As per claim 9, MDSI Mobile Data Solutions discloses wherein optimizing includes optimizing at least one pair of shifts, wherein optimizing is selected from a group consisting of swapping orders between the at least one pair of shifts and reassigning orders between the at least one pair of shifts (See page 4, sections 2-3, and page 5, sections 2-3, wherein the dispatcher rebalances the schedule).

As per claim 10, MDSI Mobile Data Solutions teaches wherein booking includes booking the order to a shift of the mobile service representative if the mobile service representative has the set of skills and the set of equipment (See page 4, sections 2-3, which discusses criteria for booking a mobile worker).

Claims 11-20 recite equivalent limitations to claims 1-10, respectively, and are therefore rejected using the same art and rationale as applied above.

As per claim 21, MDSI Mobile Data Solutions discloses a computer-implemented scheduling system for a dispatching environment having a scheduling engine for scheduling mobile service representative, the scheduling engine comprising:

a negotiator operable to negotiate an appointment window to perform an order, the order defined by a data structure that includes at least one of an appointment window, a duration, a priority, a location, and a set of skills required to carry out the order, and further includes at least one of a bumping indicator, and an aggregation indicator (See page 3, page 4, sections 2-3, and page 5, sections 2-3, which discloses

at least a location and an aggregation indicator. See page 3, section 1, and page 4, sections 2-3, wherein the reservation is negotiated);

an assignment filter configured to analyze shifts of mobile service representatives to identify shifts that are suitable for the reservation (See page 3, page 4, sections 2-3, and page 5, sections 2-3, wherein the availability of a mobile service representative to take a call is determined);

an assigner operable to assign the order to a shift of a mobile service representative (See page 3, sections 1-2, page 4, wherein the service order is booked to a schedule of a mobile worker); and

an optimizer operable to optimize dynamically at least one shift so as to enhance the scheduling system in accordance with a predetermined set of business objectives (See page 3, section 1, and page 4, sections 2-3, wherein the shifts are rebalanced periodically).

However, MDSI Mobile Data Solutions does not expressly disclose sorting the identified shifts according to objective criteria or booking a shift starting with the best shift and in descending order to the worst shift according to the objective criteria. Further, MDSI Mobile Data Solutions does not expressly teach an aggregator component is operable to aggregate reservations not limited to a particular mobile service representative and having an aggregation indicator and in accordance with an aggregation parameter set defining information of reservations to be compared during aggregation, the aggregated reservations having a same value for the information defined by the aggregation parameter set.

Sisley et al. discloses sorting the identified shifts according to objective criteria or booking a shift starting with the best shift and in descending order to the worst shift (See column 5, line 50-column 6, line 15, column 7, lines 9-20, column 8, lines 1-15, column 9, lines 20-30, and column 10, lines 15-30, which discusses sorting the shifts based on skills, availability, etc. and then listing them in a "best-first" queue). However, Sisley et al. does not expressly disclose aggregating reservations not limited to a particular mobile service representative and having an aggregation indicator and in accordance with an aggregation parameter set defining information of reservations to be compared during aggregation, the aggregated reservations having a same value for the information defined by the aggregation parameter set

Lesaint et al. teaches an aggregator component in the scheduling apparatus to aggregate reservations not limited to a particular mobile service representative and having an aggregation indicator and in accordance with an aggregation parameter set defining information of reservations to be compared during aggregation, the aggregated reservations having a same value for the information defined by the aggregation parameter set (column 12, lines 30-50, column 14, lines 15-25, wherein the order is made up of multiple aggregated orders that include information about specific ordering or requirements. Specifically, certain tasks are designated for pre-processing, while others are not. Those designated for preprocessing are allowed to be aggregated, and the tasks are matched based on conditions such as tasks that must be allocated to the same technician or tasks that require multiple technicians to be reserved).

Both Sisley et al. and MDSI Mobile Data Solutions disclose systems that assign mobile field technicians to work calls using automated means. Further, both disclose assigning the best technicians based on the appointment window, a duration, a priority, a location, and a set of skills of the technician and service call. It would have been obvious to one of ordinary skill in the art at the time of the invention to sort the identified shifts according to objective criteria and book shifts starting with the best shift first according to the objective criteria in order to increase customer satisfaction by improving the timeliness and predictability of resource delivery and increase dispatcher productivity through automated assignment and scheduling. See column 3, lines 50-55.

Further, all of MDSI Mobile Data Solutions, Sisley et al., and Lesaint et al. disclose systems that optimize the scheduling of tasks to workers in a field technician service industry, taking into account task/order requirements and worker constraints. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include scheduling aggregate orders in order to more efficiently meet the needs of the person placing the order. See column 3, lines 50-65.

As per claim 22, MDSI Mobile Data Solutions teaches wherein the order is defined by a data structure that includes an appointment window, a duration, a priority, a location, and a set of skills required to carry out the order, and wherein the data structure resides on a computer media (See page 1, section 1, page 3, page 4, sections 2-3, and page 5, section 2, which disclose duration, priority, location, etc.).

As per claim 23, MDSI Mobile Data Solutions teaches wherein the mobile service representative is defined by a data structure that includes a set of skills that the mobile

service representative possesses and the equipment that the mobile service representative possesses, and wherein the data structure resides on a computer media (See page 4, sections 2-3, which discusses criteria for booking a mobile worker).

As per claim 24, MDSI Mobile Data Solutions teaches assigning orders to mobile service representatives' shifts using constraints of the order and constraints of the mobile representative (See page 4, sections 2-3). However MDSI Mobile Data Solutions does not expressly disclose a shift being defined by a data structure that includes a shift start date and start time, a shift end date and end time, a set of break start dates and start time, a set of break end dates and end times, and a starting location and an ending location, and wherein the data structure resides on a computer media.

Sisley et al. discloses a shift being defined by a data structure that includes a shift start date and start time, a shift end date and end time, a set of break start dates, a set of break end dates, and a starting location and an ending location, and wherein the data structure resides on a computer media (See column 5, line 45-column 6, line 25 and 30-50, column 7, lines 25-42).

However, Sisley et al. does not expressly disclose the start and end times for the breaks.

Lesaint et al. discloses start and end times associated with breaks (See column 11, lines 55-65).

Sisley et al., Lesaint et al., and MDSI Mobile Data Solutions all disclose systems that assign mobile field technicians to work calls using automated means, as discussed

above. Further, Sisley et al. and MDSI Mobile Data Solutions disclose assigning the best technicians based on the appointment window, a duration, a priority, a location, and a set of skills of the technician and service call. Sisley discloses start and end days for employee vacations, appointments, etc. when the technician will not be working. Appointments and vacations having both dates and times associated with them is old and well known in appointment systems. Lesaint et al. specifically discloses start and end times associated with breaks, such as lunch breaks. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include specific times associated with the shift events of breaks in order to increase customer satisfaction by improving the timeliness and predictability of resource delivery and increase dispatcher productivity through automated assignment and scheduling, which includes shift times. See column 3, lines 50-55. See also column 6, lines 15-25, which discusses times being placed on the assignment calendar.

As per claim 25, MDSI Mobile Data Solutions teaches wherein the assigner accounts for the travel time of the mobile service representative of the mobile service representative in assigning the order to the shift of the mobile service representative (See page 4, sections 2-3, and page 5, sections 2-3, wherein the system has a set including travel time). However, MDSI Mobile Data Solutions does not expressly disclose and Sisley et al. discloses break time (See column 5, line 65-column 6, line 5, which discusses assigning orders with a consideration of a worker's breaks).

Both Sisley et al. and MDSI Mobile Data Solutions disclose systems that assign mobile field technicians to work calls using automated means. Further, both disclose

Art Unit: 3623

assigning the best technicians based on the appointment window, a duration, a priority, a location, and a set of skills of the technician and service call. Sisley specifically discloses start and end days for employee vacations, appointments, etc. when the technician will not be working. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include specific times associated with the shift events of breaks in order to increase customer satisfaction by improving the timeliness and predictability of resource delivery and increase dispatcher productivity through automated assignment and scheduling, which includes shift times. See column 3, lines 50-55.

As per claim 26, MDSI Mobile Data Solutions teaches wherein the appointment window includes an identifier, a start time, and an end time, and wherein the appointment window is visible to the negotiator (See page 3, section 1, page 4, sections 2-3, and page 5, sections 2-3, which discuss an appointment window visible to the negotiator).

As per claim 27, MDSI Mobile Data Solutions teaches wherein the order includes a predetermined level of priority, wherein the predetermined level of priority of the order determines whether the order will be bumped by another order having a higher level of priority (See page 3, section 2, page 4, sections 1 and 3, discussing priority of an order in scheduling).

As per claim 31, MDSI Mobile Data Solutions teaches a travel time component that considers travel time when assigning shifts to mobile representatives (see page 4, section 2-3, and page 5, sections 2-3, wherein the location of the worker is considered

when the task is assigned). However, MDSI Mobile Data Solutions does not expressly disclose and Sisley et al. discloses calculating the travel time between the start of a shift to the first order assigned to the shift and the travel time between two orders, and the travel time between the last order assigned to the shift and the end of the shift (See column 6, lines 18-26, and column 18, lines 43-55, which discloses travel time considerations).

Both Sisley et al. and MDSI Mobile Data Solutions disclose systems that assign mobile field technicians to work calls using automated means. Sisley specifically discloses travel time between shift assignments. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to take into consideration travel time when assignment technicians to service calls in order to increase customer satisfaction by improving the timeliness and predictability of resource delivery and increase dispatcher productivity through automated assignment and scheduling, which includes shift times. See column 3, lines 50-55.

As per claim 32, MDSI Mobile Data Solutions teaches wherein the optimizer includes an optimizing filter, wherein the optimizing filter finds a shift into which a reservation fits, with the purpose of better satisfying the optimization objectives (See page 3, sections 1-2, and page 4, wherein the shifts are optimized automatically).

As per claim 33, MDSI Mobile Data Solutions teaches wherein the optimizer includes an optimization objective component having a set of optimization objectives, wherein the optimization objective component determines the degree to which the set of optimization objectives are satisfied if the optimizer were to optimize a shift or a pair of

shifts (See page 3, sections 1-2, and page 4, wherein the shifts are optimized automatically).

Claim 34 recites substantially similar elements to claim 1 and is therefore rejected using the same art and rationale as set forth above.

As per claim 35, MDSI Mobile Data Solutions discloses adding a mobile service representative, wherein adding the mobile service representative includes identifying a working area of the mobile service representative, a set of skills of the mobile service representative, and a set of equipment types that is possessed by the mobile service representative (See page 4, sections 2-3, which considers attributes of the mobile worker in the assignment).

As per claim 36, MDSI Mobile Data Solutions teaches adding orders to mobile service representatives' shifts using constraints of the order and constraints of the mobile representative (See page 4, sections 2-3). However MDSI Mobile Data Solutions does not expressly disclose and Sisley et al. discloses adding a shift, wherein adding a shift includes identifying a mobile service representative to be associated with the shift, a start time, an end time (See column 6, lines 1-25, column 7, lines 5-22 and line 60-column 8, line 10, wherein a new call is added with a start time, end time, etc.). Sisley et al. also discloses a set of breaks (See column 6, lines 1-5, which discloses breaks, such as appointments, in the schedule of the technician).

Both Sisley et al. and MDSI Mobile Data Solutions disclose systems that assign mobile field technicians to work calls using automated means. Further, both disclose assigning the best technicians based on the appointment window, a duration, a priority,

a location, and a set of skills of the technician and service call. Sisley specifically discloses start and end days for employee vacations, appointments, etc. when the technician will not be working. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to allow a new shift to be added, along with times and breaks associated with the technician and the shift, in order to increase customer satisfaction by improving the timeliness and predictability of resource delivery and increase dispatcher productivity through automated assignment and scheduling, which includes shift times. See column 3, lines 50-55, of Sisley et al.

As per claim 38, MDSI Mobile Data Solutions teaches finding a list of appointment windows for the act of negotiating (See page 3, sections 1-2, page 4, and page 5, section 3, which discusses appointment windows).

As per claim 39, MDSI Mobile Data Solutions discloses assigning forcibly a reservation when the act of assigning the reservation has failed (See page 4, section 3, which discusses the dispatcher overriding or manually entering a reservation).

As per claim 40, MDSI Mobile Data Solutions teaches removing an assignment of a reservation (See page 5, section 4, wherein an assignment is removed).

As per claim 41, MDSI Mobile Data Solutions teaches canceling a reservation (See page 5, section 4, wherein the reservation is canceled when no one is available).

As per claim 42, MDSI Mobile Data Solutions teaches completing a reservation so as to inhibit the reservation from being bumped, aggregated, or moved to another shift (See page 3, section 2, page 4, sections 1 and 3, wherein an emergency reservation cannot be bumped).

As per claims 43 and 44, MDSI Mobile Data Solutions teaches reassigning forcibly a reservation (See page 4, section 3, wherein the dispatcher rebalances the assignments manually).

As per claim 45, MDSI Mobile Data Solutions teaches assigning a bumped or a yanked reservation (See page 4, section 3, wherein a bumped reservation is reassigned when rebalancing occurs).

As per claim 46, MDSI Mobile Data Solutions teaches setting at least one property from a set of properties of a reservation (See page 4, which sets information about the appointment).

As per claim 47, MDSI Mobile Data Solutions teaches modifying a mobile service representative (See page 4, section 3, wherein the representative's assignments are changed).

As per claim 48, MDSI Mobile Data Solutions teaches deleting a mobile service representative (See page 4, sections 2-3, wherein when an order is reassigned, the worker is deleted from the task).

As per claims 49 and 50, MDSI Mobile Data Solutions teaches modifying forcibly a shift (See page 4, section 3, wherein the representative's assignments are changed).

As per claims 51 and 52, MDSI Mobile Data Solutions teaches rebalancing a schedule and removing a shift from the schedule of one worker and placing the shift on another schedule (See page 4). However, MDSI Mobile Data Solutions does not expressly disclose and Sisley et al. discloses deleting forcibly a shift (See column 7, line 60-column 8, line 15, column 19, lines 15-35).

Both Sisley et al. and MDSI Mobile Data Solutions disclose systems that assign mobile field technicians to work calls using automated means. Sisley specifically discloses removing shifts and reassigning the shifts. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include deleting a shift of the user in order to increase customer satisfaction by allowing the system to compensate for all possible changes. See pages 1 and 3 of MDSI Mobile Data Solutions.

As per claim 53, MDSI Mobile Data Solutions teaches notifying a subscriber when a reservation event occurs (See page 5, section 4, wherein the customer is notified via call ahead).

As per claim 54, MDSI Mobile Data Solutions teaches getting reservation assignment information (See page 4, section 2-3, wherein the system receives the assignment information).

As per claims 55 and 56, MDSI Mobile Data Solutions teaches getting mobile service representative assignment information (See page 1, section 1, page 3, page 4, section 1, page 5, section 1, page 6, wherein the assignment is communicated to the mobile worker).

As per claim 57, MDSI Mobile Data Solutions teaches confirming a reservation (See page 5, section 4, wherein the reservation is confirmed).

Claims 58-60 and 62-81 recite equivalent limitations to claims 34-36 and 38-57, respectively, and are therefore rejected using the same art and rationale as applied above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dave Robertson whose telephone number is (571)272-8220. The examiner can normally be reached on 9 am to 5 pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Van Doren can be reached on (571) 272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dave Robertson/
Examiner, Art Unit 3623

/Beth Van Doren/
Supervisory Patent Examiner, Art Unit 3623